

**Claims**

1. An air treatment device (2) comprising: a gas or  
5 vapour detector comprising a plurality of gas or vapour sensors (6), wherein the gas or vapour detector (6) comprises means to detect a threshold level or concentration of a gas or vapour (12); a means to mount a source of air treatment agent (8) to the  
10 device; and a means to expel a portion of air treatment agent (14), upon detection of a gas or vapour by the detector.
2. An air treatment device (2) according to claim 1  
15 wherein the mounted source of air treatment agent also passively emanates the air treatment agent.
3. An air treatment device (2) according to claim 1 or  
20 claim 2 wherein the means to expel a portion of air treatment agent comprises a heater element in proximity to a diffusion wick, the heater element being actuated upon detection of a gas or vapour by the detector in order to increase the emanation of the air treatment agent.
- 25 4. An air treatment device as claimed in any preceding claim, wherein the means to mount a source of air treatment agent to the device comprises means to connect a receptacle (8) to the device, the receptacle (8) comprising the air treatment agent.
- 30 5. An air treatment device (12) as claimed in any preceding claim, wherein the device includes a

processor unit to determine when the signals from the gas or vapour sensors (6) cause expulsion of a portion of air treatment agent.

5 6. An air treatment device (2) as claimed in any preceding claim, wherein at least two sensors (12, 12') sense the same gas or vapour and the processor unit must receive signals from both sensors in order to cause a portion of airborne treatment agent to be 10 expelled.

7. An air treatment device (2) as claimed in claim 5 or 6, wherein the detector (6) includes a sensor (12) which detects both a target gas or vapour and a non-target gas or vapour, wherein in order to eliminate 15 expulsion of air treatment agent in response to the non-target gas or vapour, the device includes a second sensor (12') which detects the non-target gas or vapour but not the target gas or vapour, the processor unit being arranged to prevent expulsion of the air treatment agent when the second sensor detects a signal, completely or until the first sensor gives a signal at a higher threshold value than usual. 20

25 8. An air treatment device (2) as claimed in claim 5, 6 or 7, wherein the detector (6) includes a person detector (e.g. a PIR), and the processor unit allows airborne treatment agent to be expelled, in response to a signal from one or more of the sensors, only when 30 the person detector gives a signal and for an interval thereafter.

9. An air treatment device (2) as claimed in any preceding claim, wherein the detector (6) comprises a conducting polymer sensor.
- 5 10. An air treatment device (2) according to any preceding claim comprising at least one metal oxide sensor.
11. An air treatment device (2) as claimed in any preceding claim, wherein the air treatment agent 10 expulsion means comprises a pump or aerosol.
12. An air treatment device (2) as claimed in any preceding claim, on which is mounted a source of air treatment agent.
- 15 13. An air treatment device (2) as claimed in any preceding claim, wherein the air treatment agent comprises an agent capable of masking, neutralising or retarding malodour, or unwanted odour.
- 20 14. An air treatment device (2) as claimed in any preceding claim, wherein the air treatment agent comprises a deodorant, an anti-bacterial agent, a sanitizing agent, a fragrance, a perfume or an anti-allergenic agent.
- 25 15. A method of treating an airspace with an air treatment agent, the method comprising the steps of detecting a gas or vapour in an airspace and activating expulsion of an air treatment agent into the airspace in response to detection of the gas or vapour, using an air treatment device (2) according to any preceding claim.

16. A method as claimed in Claim 15, comprising the step  
of expelling a single portion of agent in response to  
detection of an airborne agent, or a plurality of  
5 portions intermittently.
17. A method as claimed in Claim 15, wherein expulsion of  
an agent comprises expelling a continuous stream of  
agent for a defined period of time upon detection of  
10 an airborne agent.